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AND

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always found associated with the dead fish. Members of the Diptera, Coleoptera, Lepidoptera, and Hymenoptera have been observed in this association. The first two orders named are by far the most abundant, both in number of species and individuals. Of these the Diptera usually far outnumber the Coleptera in number of individuals, the only four species\*, Lucilia caesar Linne, Compsomyia macellaria Fabr.; Sarcophaga sarraceniae Riley, and Sarcophaga assidua Walker, all members of the family Sarcophagidae, are at all common. Diptera are universally present in the larval stage and usually in large number while with few exceptions, as mentioned, later, the Coleoptera found associated with the dead fish are in the adult stage. This makes the Diptera of first importance in removing the frequent accumulation of fish. Twenty-one species of Coleoptera in all, as follows, were found by the writer associated with dead fish and apparently feeding thereon:

## Silphidæ

Necrophorus americanus Oliv. Necrophorus orbicollis Say. Necrophorus tomentosus Weber Silpha surinamensis Fab. Silpha inæqualis Fab. Silpha americana Linn.

## Staphylinidæ

Leistotrophus cingulatus Grav. Creophilus villosus Grav. Philonthus aeneus Rossi.

#### Dermestida

Dermestes caninus Germ. Dermestes vulpinus Fab.

#### Histerida

Hister imunis E.
Hister abbreviatus Fab.
Saprinus lugens Erichs.
Saprinus pennsylvanicus Payls.
Saprinus assimilis Payls.
Saprinus fraternus Say.
Saprinus patruelis Lec.

#### Mitidulida

Omosita colon Linn.

## Scarabæidæ

Onthophagus hecate Panz. Trox scabrosus Beauv.

It was thought that the Coleopterous scavangers might be most active at night while retiring to more secluded hiding places by day. This was disproven by night trips with lantern, when Coleoptera were found in no greater numbers than by day, except Trox scabrosus Beauv. This last named species was usually found in large numbers clumsily wading thru the sand, and leaving their paths as irregular lines running in every direction. When approached they play "possum" and easily pass for pebbles. Their frequency at fish by night, however, did not show a marked increase over that of the day.

One or more of the larval forms of this species may be found in their burrows in the sand a few inches under many of the fish, and are sometimes found under boards on the fish strewn beach. None were observed feeding, however, either by night or day.

Early in the period of observation it was found that fish removed from the beach to shaded places under the trees drew coleoptera in much larger number and representing more species.